

Original Research Article

Knowledge of disaster preparedness among medical professionals in JNU Institute for Medical Sciences and Research Centre, Jaipur, Rajasthan

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ABSTRACT

Background: Disaster causes widespread destruction, disrupting people's lives and causing human suffering with communities finding it difficult to cope. Human beings may not have the power to stop it but they may have the ability to be prepared and minimize the impact of the disaster. The medical professionals play a pivotal role in a disaster situation and its knowledge is a must during their academics. This study was aimed to assess the level of knowledge of disaster preparedness among medical professionals.

Methods: A cross-sectional study was conducted among the medical professionals in JNUIMSRC, Jaipur, Rajasthan. A total of 225 people were selected and interviewed. Data was collected using self-administered semi-structured questionnaire and scoring was done for the assessment of knowledge on disaster preparedness. Epi-info software version 7.2.3.1 was used for statistical analysis.

Results: Out of a total of 225 respondents, 140 were females and 85 were males. The mean age of respondents was 20±0.58 and most of them were in the 18-24 years age-group (61.33%). A total of 191 (88.9%) respondents had either partial or total lack of knowledge regarding disaster preparedness. Most of the respondents, 195 (86.67%) had a view that there is a need to introduce disaster preparedness training program.

Conclusions: The findings revealed that most of the study participants had not attended any training on disaster management and most of them had low knowledge about disaster preparedness. The integration of disaster education into the curriculum is believed to be the most effective strategy.

Keywords: Disaster, Preparedness, Medical, Professionals

INTRODUCTION

Disasters are contingent and unpredictable and can only be dealt with by effective disaster management plans. Disaster has never happened does not mean; it cannot happen. The number of natural and man-made disasters in the present era continues to rise worldwide. Medical personnel can prove to be a useful medical workforce in such a situation.¹ Medical personnel must understand

their role and the gravity of the situation if a disaster happens, and they have to know basic strategies carried out in disaster management plan. As per the WHO, disaster is a serious disruption of the functioning of a community or society causing widespread human, material, economic, or environmental losses, which exceeds the ability of the affected community or society to cope using its resources.²

A disaster is internal if the hospital itself is involved. A disaster is external if the disaster is outside the hospital, and multiple casualties are taken to the hospital, or the hospital must dispatch a team to the disaster site. Disasters can be owing to natural events (such as storms, drought, earthquakes, and disease epidemic), or technological events (such as explosions, structure collapse, and radiological accidents) or civil/political events (such as strikes, terrorism, and biological warfare).² Knowledge and preparation is the key to survival in the event of a catastrophe. Medical professionals require a unique knowledge base to function effectively during a hospital's response to mass-casualty disasters. Being part of the health team, they must have sufficient knowledge and skills to respond efficiently to different catastrophic situations.³

There is a general reluctance among the people that any tragedy can appear at any time in the form of a disaster. Unfortunately, disasters are seen more in the context of emergency responses than pre-planning or preparedness measures.⁴ Preparedness consists of activities designed to minimize loss of life and damage, organize the temporary removal of people and property from a threatened location, and facilitate the timely and effective rescue, relief and rehabilitation (Disaster Preparedness and Mitigation Summit, 2002). Continuous preparedness saves lives, lessons personal suffering and loss and reduces the destruction of property and economic losses.⁵

The knowledge of disaster preparedness and management among the medical professionals aims to reduce morbidity and mortality, to provide medical and health-care assistance, and to help in achieving rapid and durable recovery. Keeping this fact in mind, this study was planned among medical professionals with the following objectives;

- To determine the knowledge of medical professionals regarding disaster preparedness at a tertiary-level centre, Jaipur National University Institute for Medical Sciences and Research Centre in Jaipur, Rajasthan.
- To determine the attitude regarding the need for disaster preparedness program.

Table 1: Experience of training or workshop regarding disaster preparedness among respondents by gender.

Training/workshop done	Gender		Total frequency	Percentage (%)
	Male	Female		
Yes	12	32	44	19.6
No	73	108	181	80.4

For assessment of knowledge among medical professionals, Dispreka score was used and the scoring and grading of responses was done. Out of the total 225 respondents, 191 (84.9%) respondents had either partial or total lack of proper knowledge about the disaster preparedness while only 34 (15.1%) respondents in the study sample had good knowledge regarding disaster preparedness (Table 2).

METHODS

A cross sectional study with above mentioned objectives was planned in JNU Institute for Medical Sciences and Research Centre, Jaipur, Rajasthan This study was conducted during January 2019 to May 2019. All medical professionals in JNU Institute for Medical Sciences and Research Centre, Jaipur, Rajasthan were included in the study. The permission of the ethical committee of the institution was taken for the study and verbal informed consent was obtained from respondents before including them in the study. Those who declined to give consent were excluded from the study. A total of 225 medical professionals were interviewed.

A structured semi-close ended questionnaire was used to determine the knowledge regarding disaster preparedness and attitude towards the need of the disaster preparedness program. A scale for grading the knowledge was created using the responses of the study participants and was called as disaster preparedness knowledge assessment score (Dispreka score). For this, all the respondents were asked 10 questions on knowledge of disaster preparedness. The response was recorded as Yes, No and Don't know coded as '2', '1' or '0' respectively. The total score was evaluated between 0 to 20 and converted into a percentage. The score below 50% was defined as poor, 50-65% as an average and above 65% was considered as good. Dispreka score was used for assessment of knowledge and its validity was tested by Cronbach's alpha (=0.873). Data were collected and results were analysed using frequency tables and proportions. Epi-info 7.2.3.1 version software was used for statistical analysis.

RESULTS

There was a total of 225 respondents who participated in the study. Out of these 140 respondents were females and 85 were males. The mean age of the study participants was 20±0.58 years. Most of the respondents (61.33%) were in the 18-24 years age-group (n=138) (Table 1).

One-fifth (20.44%) of the total participants were unaware of the role of medical personnel during the disaster. Out of the total respondents, 95 (42.22%) responded that the satellite phones are the best mode of communication during a disaster situation (Figure 1). Respondents were asked about previous training or workshop regarding disaster preparedness. Most of the respondents, 181 (80.44%) hadn't attended any training or workshops

while 44 (19.56%) participants had previous experience. The training was very strongly associated with level of

knowledge of the participants. ($\chi^2=33.858, p<0.00001$) (Table 3).

Table 2: Grading of respondent’s knowledge based on Dispreka score (n=225).

Grading	Scoring	Interpretation of knowledge	Frequency	Percentage (%)
Grade 1	Less or equal to 10	Poor	92	40.9
Grade 2	11-13	Average	99	44.0
Grade 3	13 or more	Good	34	15.1

Table 3: Association of training or workshop experience with Dispreka score among respondents.

Dispreka score	Interpretation of knowledge	Training/ workshop done		P value*
		Yes	No	
Less or equal to 10	Poor	9	83	<0.00001
11-13	Average	17	82	
13 or more	Good	19	15	

* The chi square statistic is 33.858. The p value is <0.00001. The result is significant at $p < 0.01$.

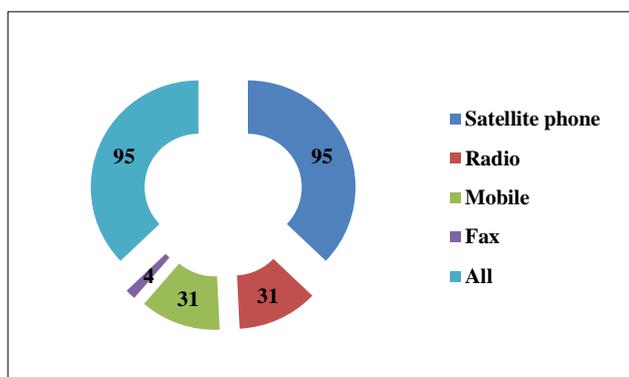


Figure 1: Mode of communication during disaster reported by respondents.

Most of the participants, 195 (86.67%) had a view that there is a need to introduce a disaster preparedness training program at various academic levels including medical colleges and teaching hospitals and the role of medical graduates should be established in disaster risk management during all phases of training.

DISCUSSION

In our study, out of a total of 225 study subjects, most of them were in the 18-24 age groups (61.33%). In the study by Rahman et al, half 60 (50.0%) of the study participants were in the age group 20-30 years.⁶

In our study, for assessment of knowledge among medical professionals, Dispreka score was used and the scoring and grading of responses was done. A total of 191 (84.9%) respondents had either partial or total lack of proper knowledge about the disaster preparedness while only 34 (15.1%) people had good knowledge. In the finding of Naser et al, study, about 32.0% had good knowledge, 53.5% had fair and 14.5% exhibited poor knowledge.⁷ The authors found that the overall knowledge status of health professionals was insufficient

with regards to emergency and disaster preparedness. While according to Rahman et al, 30.0% of the study participants had a good level of knowledge and only 49.2% had a high level of awareness.⁶ In a study by Singhal et al medical student’s awareness and attitude for the disaster plan and preparedness were significantly positive.¹ The research findings of Khan et al, demonstrated that 48 percent of respondents had inadequate knowledge, 42 percent of them had moderately adequate knowledge and only ten percent of them had adequate knowledge on disaster preparedness.³

In our study, one-fifth (20.44%) of the total respondents were unaware of the role of medical personnel during the disaster. In the study by Singhal et al, the practices regarding disaster preparedness training and performance of drills were largely negative.¹ In the study, respondents were also asked about previous training or workshops regarding disaster preparedness. Most of the participants in our study (80.44%) had not attended any training or workshops previously while 44 (19.56%) had previous experience of that. The association between training and the level of knowledge was found to be highly statistically significant ($p<0.00001$). Singhal et al, found that majority of students responded positively to include the disaster training in an internship program.¹ Naser WN et al, mentioned that 41.0% of all respondents had received no courses in disaster preparedness while 58.9% of respondents had not participated in any exercise in emergency and disaster preparedness.⁷

In our study, most of the study subjects ($n=195, 86.67%$) had a view that there is need to introduce disaster preparedness training program at various academic levels. According to Khan et al, disaster training, and education was considered extremely important by 73% of respondents. They recognized that disaster specific courses and disaster drills are useful tools for disaster preparedness.³ Naser et al, said that majority (91%) of them acknowledged that they were inadequately prepared

for disasters but were aware of the need for such preparation.⁷ They also mentioned that the trained staff used NGOs, and online-related programs more frequently for learning disaster planning (15.7%, and 13.6%) respectively. In contrast, formal resources such as Ministry of Public Health and Population (MOPHP), health facility, medical schooling programs were used by lesser number (10.2%, 9.6, and 7.3%) of respondents, respectively.⁷

CONCLUSION

The findings revealed that the majority of medical professionals had a paucity of knowledge regarding disaster preparedness and management. Most of the study participants had not attended any training and those who attended had a view that there is a need to introduce disaster preparedness training program at various academic levels. Disaster specific courses and disaster drills are useful tools for disaster preparedness. Evacuation exercises and mock drills should be done for the entire professional premises at least once a year.

It is recommended that adequate disaster preparedness and management content should be incorporated into medical education in India. Disaster training should be a part of the graduate and postgraduate medical syllabus. The integration of disaster education into curricula, specifically in community health curriculum, is believed to be the most effective strategy. All medical institutes including medical colleges and teaching hospitals should have intensified efforts to improve knowledge and awareness regarding disaster preparedness and risk management among medical personnel. Various pieces of training and workshops should be planned at least once a year on the premises. The health system has to introduce a health program for improving awareness and benefits of disaster preparedness among various individuals at various levels so that they strive to become competent managers of such situations.

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